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Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

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MAY 1987

SUMMARY

Total deliveries in May jumped more than 4 percent or 647 thousand B/D from a year ago, primarily because of strong deliveries for gasoline, kerosine jet fuel, and other oils. Gasoline deliveries, in particular, rose a surprising 7 percent or nearly half a million B/D, in sharp contrast to generally weak performance earlier this year. Actual consumption growth for gasoline, however, is probably closer to 2 percent and similar for total deliveries.

Meanwhile, distillate deliveries declined year to year for the fourth month in a row, despite indications of stable consumption; residual fuel oil continued its decline from last year's fuel-switching-related surge.

Imports in May were about equal to last year's level. However, while a significant portion of last May's imports went towards inventory building, this May's imports were not enough to keep stocks from falling contraseasonally by 17 million barrels. With lower domestic crude oil production—down about 740 thousand B/D from the February 1986, recent-year peak—and higher deliveries, imports would ordinarily have risen by over 1.3 million B/D year to year if inventory behavior had been more typical both years. Strong deliveries and caution in view of world oil market uncertainties both contributed to May's stock decline.

Percentage utilization of refining capacity averaged in the low 80s for the month, similar to April's rate but down from last May's unusually high level. Compared with previous Mays, refinery yield patterns emphasized gasoline production over other products.

PRODUCTS SUPPLIED [1/]

Gasoline

WEAK PERFORMANCE REVERSED IN MAY. In one of the largest increases since the middle of last year, gasoline deliveries for May rose 7 percent or nearly one half million B/D. This surprising growth, larger than any likely consumption increase, contrasts with the generally weak deliveries performance of the past several months which, we believe, understated consumption gains. Averaging out the fluctuations in gasoline deliveries' growth rates for the first five months of this year yields a 2.3 percent gain over the same period last year. This is roughly in line with the likely growth in actual usage as consumers continue to adjust to retail prices which are about one fourth lower than two years ago on an inflation-adjusted basis.

Gasoline consumption and deliveries may actually be higher than shown by API or Department of Energy data (to which the API series is keyed), if data collected independently by the Department of Transportation are taken as a benchmark. The growing discrepancy between Department of Transportation and Department of Energy data, however, has taken several years to develop and may not necessarily affect short-term comparisons significantly. (For more on this subject, see page 2).

Coinciding with the continued spread of mid-grade unleaded, unleaded premium's share of deliveries, which had been booming in the last half of last year, has flattened and even declined slightly in recent months. Nevertheless, the share of all unleaded grades increased more than 8 percentage points year to year in May, bringing unleaded's share to over 75 percent for the first time.

Distillates

DELIVERIES FALL FOR FOURTH TIME THIS YEAR. For the fourth month in a row, distillate deliveries declined year to year despite indications that consumption has been stable. May's decline of 3.0 percent brought year-to-year date deliveries to 3.1 percent or roughly 100 thousand B/D below last year's first five months, the lowest for that period in four years. When adjusted for understated deliveries for January, 1986, the decline becomes 3.6 percent for the year to date.

This year's deliveries decline has come in spite of a year-to-date increase in truck traffic of from 1 to 2 percent and a similar rise in rail traffic. Heating use has likely been about the same both years, as lower oil prices this past season halted most conversions to other fuels and weather averaged about the

API ESTIMATES	MAY		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	16.5	4.1	16.3	2.2
Crude oil production[2/]	8.4	(4.5)	8.4	(6.7)
Total imports[3/]	6.0	(0.1)	5.8	12.2
Stocks (million bbl)[3/]	1,015	0.7	na	na

ARE DOE GASOLINE DELIVERIES UNDERSTATED?

Department of Transportation (DOT) data on gasoline sales have traditionally been somewhat higher than Department of Energy (DOE) deliveries estimates, but the gap has increased in the past three years. The discrepancy could be the result of numerous factors, with one possibility being that the DOE data are too low.

The Department of Transportation bases its data on state reports on excise tax collections and publishes a preliminary report monthly. Later, in preparing the final estimate, adjustments are made which regularly result in a lower figure than the preliminary monthly series. This downward adjustment should be kept in mind when comparing preliminary 1986 DOT data with DOE deliveries data for that year.

The DOE data, to which API's estimates are keyed, are collected further up the distribution chain, showing deliveries from primary storage—that is, refineries, bulk terminals, and pipelines. Two differences between the DOE and DOT data are 1) aviation gasoline is included by DOT but treated seperately by DOE. The amount involved has typically been 25 to 30 thousand B/D. 2) DOE data include only ethanol blended within the primary system; most is blended further down the distribution chain and thus is not measured by the Department of Energy. Based on DOT gasohol data, the quantity of ethanol consumed as motor fuel but not measured by DOE is on the order of 50 thousand B/D.

The accompanying table displays DOT "total gasoline use" as published annually, DOT data with aviation gasoline and estimated ethanol blending removed to make the series comparable with DOE data, and DOE's published data on gasoline deliveries. The adjusted DOT figure for 1986 is based on the preliminary series, adjusted downwards by about 80 thousand B/D to exclude aviation gasoline and ethanol blending, and another 70 thousand B/D as the average remaining adjustment made by DOT in the previous three years. As the table shows, the gap between the two series has grown from around 60 thousand B/D in 1982 and 1983 to 100-115 thousand B/D in more recent years.

It seems more probable that the DOE data would be understated than that the DOT data would be too high. It is unlikely that tax-related data would be overstated or double-counted since those paying the tax have no incentive to overpay excise taxes. In addition, DOE data have on occasion been understated in the past. In 1981, for example, extension of the reporting system brought in roughly 300 thousand B/D in additional gasoline deliveries that had not been included in data immediately prior to that time. In 1985, the inclusion of additional blenders increased measured gasoline deliveries, but only by a minor amount.

As to whether DOE gasoline deliveries are currently understated and why, the answer is not clear. The growing gap between DOT and DOE data suggest, however, that further investigation is needed.

COMPARISON OF DOT AND DOE GASOLINE DATA
(Thousand B/D)

	Department of Transportation		Department of Energy	Difference, DOE Versus Adjusted DOT
	Total Gasoline Use	Adjusted to DOE Basis		
1982	6,637	6,599	6,539	60
1983	6,731	6,677	6,622	55
1984	6,850	6,790	6,693	97
1985	7,020	6,944	6,831	113
1986	na	7,150	7,034	116

Sources: "Total Gasoline Use" from *Highway Statistics,* various years, Department of Transportation; "Adjusted to DOE Basis", API; "Department of Energy" from *Petroleum Supply Annual,* 1982 to 1986.

same for January to May this year as for last. Changes in other demand sectors, too, have probably had only a minor effect on total consumption. The continued discrepancy between deliveries declines and consumption indicators is as of yet unresolved, though nonprimary inventory movements likely provide at least part of the explanation.

Residual Fuel Oil

SWITCHING-RELATED DECLINE CONTINUES. Reduced consumption of residual fuel oil at electric utilities continued to be a drag on deliveries in May, which fell nearly 9 percent or close to 120 thousand B/D. Declines in utility usage are estimated to account for 70 to 100 thousand B/D of May's decline, with the rest due mainly to decreased domestic bunkering. The switch back to other fuels at utilities has been encouraged by higher residual fuel oil prices and natural gas prices that continue to be soft.

In addition to increased generation from natural gas, up 5.6 percent in the first quarter and perhaps more for more recent months, increased nuclear generation this year has helped to reduce petroleum's already-small share of generation to less than 5 percent currently. First quarter nuclear generation, in fact, was up 14 percent year-to-year, leaving coal with a 1 percent loss for the period.

Kerosine Jet Fuel

DELIVERIES FOR FIVE MONTHS RISE ALMOST 9 PERCENT.

May's kerosine jet fuel deliveries rose 8 percent or 82 thousand B/D, and for the year to date the deliveries increase was only slightly less than last year's annual rise of close to 10 percent.

The continuation of strong growth in kerosine jet fuel consumption this year reflects a similar pattern in air traffic, for which the increase in total available seat miles for the year to date is estimated to be almost as large as last year's 11 percent rise. Though cargo traffic's growth rate this year has been somewhat less, at 7 to 8 percent, it accounts for only about a fifth of revenue ton-miles and thus its less-rapid growth has had only a limited effect on overall air traffic increases.

Other Oils

PETROCHEMICAL SALES PUSH UP DELIVERIES.

Deliveries of other oils, which had been relatively flat until recently, continued to show signs of renewed growth in May, rising 8.4 percent or 315 thousand B/D. First quarter data from the Department of Energy indicate that, although there has been growth for most products in this category in 1987, strong demand for petrochemicals has played a significant role in the increase.

Deliveries of naphtha-based feedstocks rose 39 thousand B/D or over 30 percent in the first quarter, while propane deliveries for all uses increased 143 thousand B/D or over 15 percent over last year's poor showing. Despite crude oil costs higher, relative to natural gas, than in the latter half of last year, ethane has shown little sign of recovery. Strong demand for non-ethylene derivatives produced from heavier feedstocks apparently led to ethane's first quarter decline of 56 thousand B/D or 10 percent. A 37 thousand B/D increase for lubricants also contributed to the 170 thousand B/D rise in first quarter deliveries of total other oils.

SUPPLY [1/]

Production

ALASKAN INCREASE OUTWEIGHED BY LOWER 48 DECLINE.

May crude oil production fell 398 thousand B/D or 4.5 percent, year to year, but because lower world oil prices were already depressing production a year ago, the decline from the early 1986 recent-year peak amounted to about 740 thousand B/D.

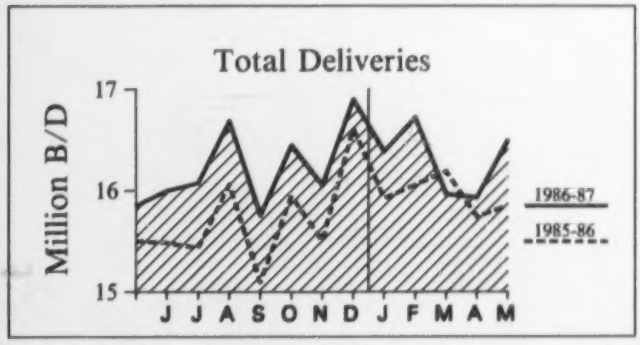
Lower 48 production has remained in the 6.4 million B/D range since the beginning of the year, after falling dramatically in 1986. This may indicate that the rapid fall in oil prices in 1986 quickly reduced production from existing marginal wells which had become uneconomic; the effect of reduced drilling, however, at roughly half of what it had been just prior to last year's crude oil price decline, has likely only just begun to become apparent.

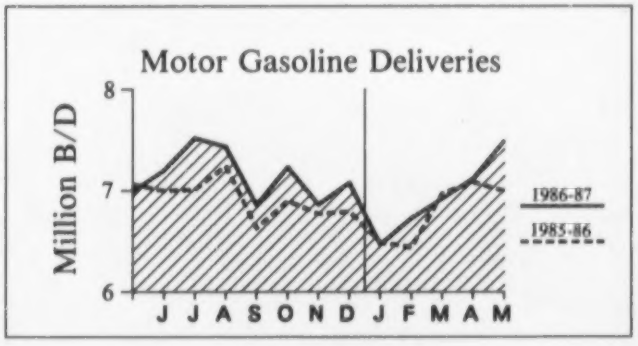
The reduced production level in the lower 48, still at about 850 thousand B/D below the recent-year peak of early 1986, has been only partially compensated for by increased Alaskan production. Production there has been averaging about 100 thousand B/D higher so far this year compared with early 1986, due to completion last December of several production projects begun before the 1986 price decline.

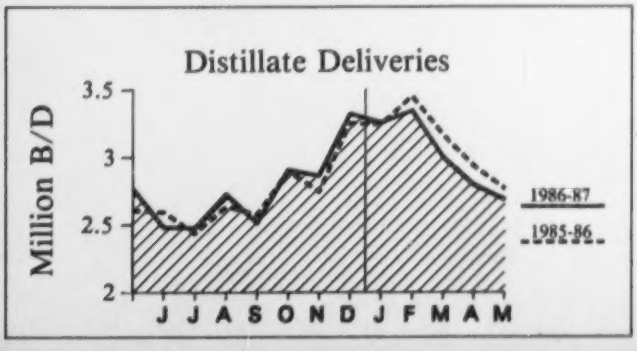
Imports

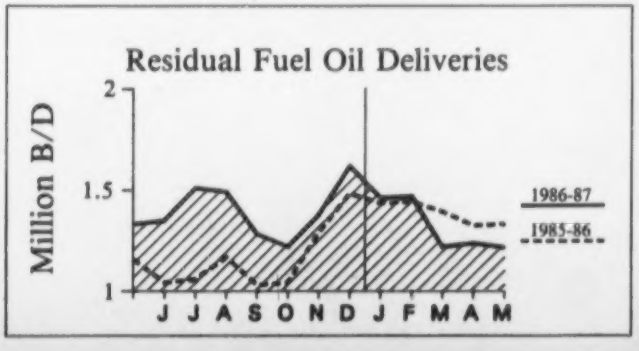
ALMOST EVEN, THOUGH PRODUCTION IS DOWN, DEMAND HIGHER.

Total imports in May roughly equalled those of last May, when imports were accelerating as refiners took advantage of favorable crude oil pricing terms. But while a significant portion of last May's imports went towards building inventories, this May's imports were not enough to keep inventories from falling contraseasonally as a result of lower domestic production and higher demand. Had stock movements been the same both months, this May's imports would have risen more than 1.3 million B/D over last May.









Crude oil imports rose close to 175 thousand B/D year to year, but product imports fell by a similar amount. The product decline was mainly due to a 128 thousand B/D drop in imports of gasoline and components to 332 thousand B/D. Though deliveries of residual fuel oil have declined about 65 thousand B/D for the year to date, the reduction has come out of refinery production rather than imports. Imports of residual fuel oil were almost even in May and up over 4 percent for the year to date.

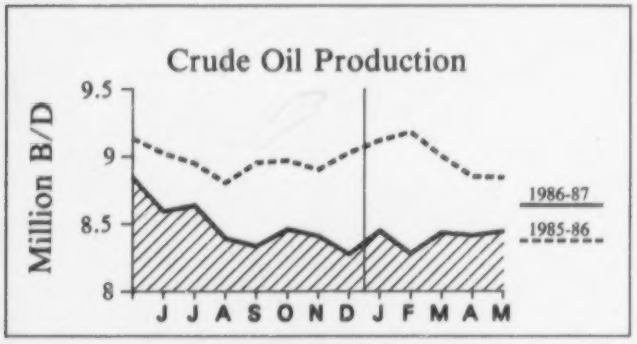
Refinery Operations

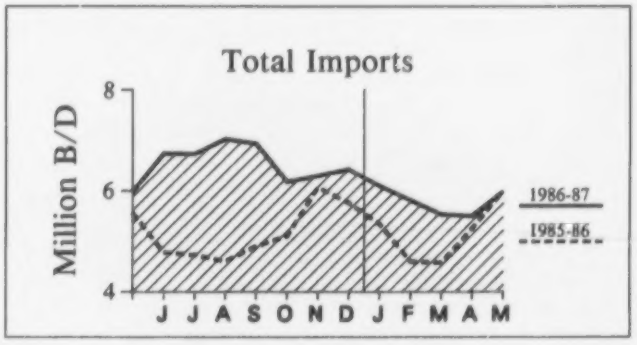
GASOLINE OUTPUT EMPHASIZED. May's percentage utilization of refinery capacity averaged in the low 80s, similar to April's experience. However, because of unusually high runs last May, when utilization had reached the highest monthly level since 1979, this May's input to distillation units showed a greater than 4 percent decline by comparison. Despite this drop, gasoline production fell only 2.4 percent year to year and was actually more than 5 percent higher than for May 1985, as refinery yield patterns emphasized gasoline over other products. In the face of continued weak deliveries, distillate production declined over 11 percent year to year and almost 6 percent versus two years ago. Residual fuel oil production also declined substantially because of lower deliveries, falling close to 12 percent from last May.

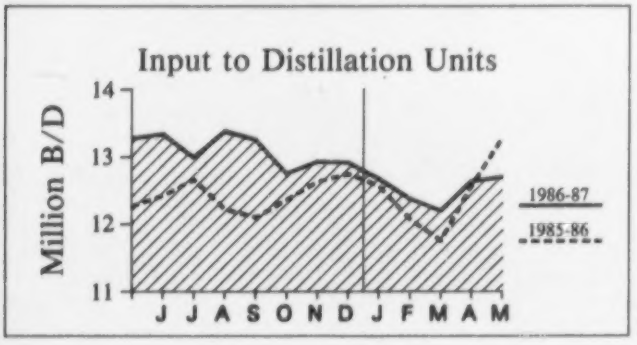
Inventories

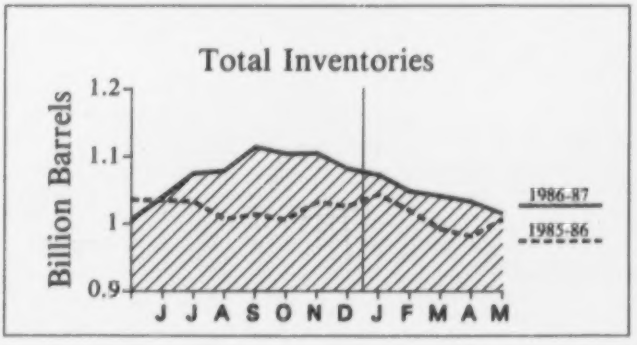
17 MILLION BARREL DROP CONTRARY TO USUAL MAY PATTERN. Total inventories' decline in May of 17 million barrels was contrary to the typical seasonal pattern and a departure from recent previous months' less-than-seasonal declines as well. May's drop contrasts with an average 17 million barrel increase for the five previous Mays. Gasoline inventories, in particular, which had begun the month at the highest level in three years, fell 12 million barrels versus an average increase of about 3 million barrels. Even so, gasoline stocks ended the month about 9 million barrels ahead of last year.

Distillate stocks, at 99 million barrels, were in the range of end-of-season lows experienced in recent years, while crude oil stocks slipped another 4 million barrels to the lowest level since late 1985. May's inventory behavior can be attributed to a combination of strong gasoline deliveries helping to work off inventories of that product and caution in holding stocks in view of uncertain world oil markets.









1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 525 million barrels as of May 31, 1987).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	MAY			YEAR-TO-DATE		
	1987[1]	1986[2]	% Change	1987[3R]	1986[2]	% Change
Products Supplied:						
Total motor gasoline	7,488	6,995	7.0	6,954	6,800	2.3
Finished leaded motor gasoline*	1,823	2,281	(20.1)	1,765	2,200	(19.8)
Finished unleaded motor gasoline*	5,665	4,714	20.2	5,189	4,600	12.8
Naphtha-jet	209	230	(9.1)	203	200	1.5
Kerosine-jet	1,101	1,019	8.0	1,143	1,052	8.7
Distillate fuel oil	2,689	2,771	(3.0)	3,014	3,110	(3.1)
Residual fuel oil	1,216	1,333	(8.8)	1,319	1,385	(4.8)
All other oils[4]	4,058	3,743	8.4	3,940	3,717	6.0
Reclassified[5]	- 262	- 239	9.6	- 269	- 311	(13.5)
Total domestic products supplied	16,499	15,852	4.1	16,304	15,953	2.2
Exports	851	715	19.0	857	792	8.2
Total products supplied	17,350	16,567	4.7	17,161	16,745	2.5
Supply:						
Domestic production:						
Crude oil[6]	8,444	8,842	(4.5)	8,396	8,997	(6.7)
Natural gas liquids	1,585	1,594	(0.6)	1,590	1,640	(3.0)
Other supply[7]	783	940	(16.7)	930	837	11.1
Total domestic supply	10,812	11,376	(5.0)	10,916	11,474	(4.9)
Imports:						
Crude oil, total	4,166[10/]	3,993[10/]	4.3	3,957[10/]	3,374[10/]	17.3
Canadian	587	582	0.9	560	529	5.9
Other	3,579	3,411	4.9	3,397	2,845	19.4
Products, total	1,810	1,987	(8.9)	1,832	1,784	2.7
Residual fuel oil	650	665	(2.3)	616	590	4.4
Other	1,160	1,322	12.3	1,216	1,194	1.8
Total imports	5,976	5,980	(0.1)	5,789	5,158	12.2
Total supply	16,788	17,356	(3.3)	16,705	16,632	0.4
Stock change, all oils	- 562	+ 789	XXXX	- 456	- 113	XXXX
Refinery Operations						
Input to crude oil distillation units	12,702	13,277	(4.3)	12,519	12,454	0.5
Operable capacity	15,621	15,487	0.9	15,629	15,513	0.7
Refinery utilization (%)[8]	81.3%	85.7%	(5.1)	80.1%	80.3%	(0.2)
Crude oil runs	12,572	13,259	(5.2)	12,417	12,344	0.6

Stocks (millions bbls.)	1987		1986[2]	% Change from ...	
	May 31[9]	Apr. 30[9]	May 31	Previous Month	Year Ago
Crude oil[10/]	323.3	327.4r/	328.9	(1.3)	(1.7)
Unfinished oils	104.1	105.7r/	112.0	(1.5)	(7.1)
Total motor gasoline**	231.3	243.5	222.6	(5.0)	3.9
Finished leaded motor gasoline*	57.8	59.9	71.5	(3.5)	(19.2)
Finished unleaded motor gasoline*	134.4	142.0	118.0	(5.4)	13.9
Naphtha-jet	7.2	6.5r/	6.1	10.8	18.0
Kerosine-jet	39.1	40.9r/	38.8	(4.4)	0.8
Distillate fuel oil	99.2	100.2	97.8	(1.0)	1.4
Residual fuel oil	40.9	38.0	39.6	7.6	3.3
All other oils	170.3	170.6r/	162.5	(0.2)	4.8
Total all oils	1,015.4	1,032.8r/	1,008.3	(1.7)	0.7

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-March, U.S. Department of Energy, April-May, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes Unaccounted-for crude oil, Refinery input of other hydrocarbons, and Processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.